

Review of: "The COVID 19 vaccine patent race"

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Potential competing interests: The author(s) declared that no potential competing interests exist.

Summary: The article is well-written and consists of a clear and easy-to-follow historical description of the development of mRNA vaccines. However, it lacks a precise formulation of a research question and description of methodology to give the article structure and a clear research goal. Unfortunately, this lack of concise structuring shows again in the conclusion, where the author superficially raises patent law concerns without even a basic approach to the role and function of patent law, especially in the context of medical research.

While the abstract starts with an overview of factual Covid developments, it does not clearly state what the goal and methodology of the article is. "the race to the vaccine and its patents" are insufficient to precisely understand the research question.

In the "Phase 1"-section of the article, the author describes the historical development of the mRNA technology and mentions the significant milestones. This works well as an overview, however, it feels a bit disjointed and gives the feel of "filler" since it is not connected to an initially stated research question. In addition, the mention of Robert Malone as part of the development process should be accompanied by a more careful description since Robert Malone has since left the scientific community and is mostly concerned with conspiracy theories.

The "Phase-2"-section of the article, unfortunately, feels like another introduction into the topic. It is also a historic, albeit more recent, description of the vaccine development. It does not seem entirely necessary to split the introduction into these two parts.

"Phase-3" section of the article is very interesting and provides inside in the patenting process.

The biological and technical considerations re. the vaccines and proteins are well-documented and fit an academic journal just fine.

However, given the lack of a clear structure of research question, methodology and goal, the conclusion of the article raises more questions than it answers. While it might be true that the "plug-and-play" character of the mRNA vaccine increases the difficulty of future patents within the same line of technology, the question remains how the role of patent law is supposed to work in that regard. The author describes that patents are "an essential incentive for researchers and investors" - however, the article does not sufficiently discuss how the "plug-and-play" character might also decrease development and research costs and therefore in turn decreasing the need for patents. This issue is certainly not new to

research in the mRNA vaccine field. Also, certain patent jurisdictions, such as Germany and the EU have privileges additional medical indications for inventions that would otherwise not be considered “novel” under patent law. It would certainly add to the article if the author would consider a less than superficial approach to the role, function and medical privileges of patent law.